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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,050	02/04/2004	Stephen James Consolazio	NORTE-525A	3908
7663	7590	06/05/2006	EXAMINER	
STETINA BRUNDA GARRED & BRUCKER 75 ENTERPRISE, SUITE 250 ALISO VIEJO, CA 92656			NGUYEN, SIMON	
			ART UNIT	PAPER NUMBER

2618

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/772,050		CONSOLAZIO, STEPHEN JAMES	
	Examiner		Art Unit	
	SIMON D. NGUYEN		2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-63 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-41, 43, 44 and 46 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14, 15, 42, 45, 47-56, 58, 60, 61 and 63 is/are rejected.
- 7) ☒ Claim(s) 11, 13, 16, 57, 59 and 62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/13/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 42 and 45 are rejected under 35 U.S.C. 102(e) as being anticipated by Ammar et al. (2004/0203528).

regarding claims 42 and 45, Ammar discloses a MMIC device (transceiver board 50) comprising: a transmitting circuit comprising a mixer (73), a amplifier (76); a receiving circuit comprising a LNA, a filter, a mixer; and an LO circuit (synthesizer 54) comprising a power divider (89) for dividing an LO signal to provide the LO signal to an input of the TX mixer and an input of the RX mixer (fig.2, paragraphs 39, 41-43).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7-10, 12, 47, 53-56, 58, 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ammar et al. (2004/0203528).

Regarding claim 1, Ammar discloses a millimeter wave transceiver (abstract, fig.2), comprising:

a first MMIC device (transceiver board 50) comprising, a transmitter (73,74,75,76) for receiving a data stream input (68a) at a baseband frequency, mixing the data stream with an LO signal and transmitting a resultant data stream at an up-converter (73); a receiver for receiving a data stream, mixing the received data stream with an LO and downconverting the signal to an IF (90, 78, 79, 80, 81) (paragraphs 39, 41-42);

a second MMIC device (board 54) comprising a multiplier for receiving an LO signal at a reference frequency and multiplying the LO signal to a frequency (paragraph 43);

a third MMIC device (board 48) comprising a second downconverter (82b) for mixing the IF and an LO signal (from oscillator 83) to a baseband frequency (from 82b to diplexer 68), and an LO circuit (83) for generating the LO signal to the second downconverter (paragraph 42). However, Ammar does not specifically disclose the MMIC transceiver is an E-band transceiver and dividing the LO signal to the second downconverter in the third MMIC device.

It should be noted that Ammar disclosing the MMIC transceiver use a high intensity frequency which also called an E-band transceiver which is known to those skilled in the art and the LO signal generated by the oscillator 83 comes from the

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synthesizer board 54, wherein the synthesizer is known to include a divider for dividing the oscillator signal if required by a design choice for mixing with an IF signal in order to generate a desired baseband signal. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a divider for dividing the oscillator reference signal prior to mix with an IF signal in order to produce a desired baseband signal.

Regarding claim 47, this claim is rejected for the same reason as set forth in claim 1.

Regarding claims 7-10, 53-56, Ammar further discloses the transceiver adapted to communication with other communication devices, wherein the transmitting circuit including a mixer (73), and an amplifier (75), wherein the receiving circuit including a LNA (79), a mixer (81) a filter (80), wherein the LO circuit including a power divider (89) (fig.2).

Regarding claim 12, 58, Ammar further discloses the second down converter comprising one amplifier (82), a LPF (82a), and a mixer (82b).(fig.2).

Regarding claim 63, Ammar further discloses the transceiver used in a point-to-point (paragraph 35).

5. Claims 2-3, 6, 14-15, 48-49, 52, 60, 61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ammar et al. (2004/0203528) in view of Sepehry-Fard (6,473,598).

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Regarding claims 2-3, 6, 48-49, and 52, Ammar fails to teach that the MMIC transceiver is manufactured by HMET and MESFET processes and GaAs devices.

Sepehry-Fard discloses a MMIC transceiver manufactured either a HEMT process or a MESFET process (column 6 lines 30, 48, column 8 line 18, column 10 lines 60-61) and GaAs device (column 6 lines 47-49, column 11 lines 5-7)). It should be noted that Sepehry-Fard does not specifically disclose all devices are manufactured by a HEMT process and first and second MMIC devices manufactured by a HEMT and a third device manufactured by a MESFET.

It should be noted that since Sepehry-Fard discloses that the MMIC transceiver is manufactured by either one of the process, which is obvious a choice for a designer to decide which process is better for the transceiver. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have the idea as taught by Sepehry-Fard in the MMIC transceiver of Ammar in order to improve the system performance.

Regarding claims 14-15, 60-61, Sepehry-Fard further discloses a sub-harmonic mixing scheme for utilizing in the transceiving circuit (column 6 lines 32-49, column 7 lines 58-67, fig.7).

6. Claims 4, 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ammar et al. (2004/0203528) in view of Slaughter et al. (2002/0176139).

Regarding claims 4, 50, Ammar fails to teach the frequency ranges 71-76, 81-86, 92-94 GHz.

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Slaughterdiscloses a MMIC transceiver having ranges from 71-76, 81-86, 92-94 GHz (paragraph 56). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have Ammar, modified by Slaughter in order to improve a range performance.

7. Claims 5, 51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ammar et al. (2004/0203528) Sepehry-Fard (6,473,598), in view of Slaughter et al. (2002/0176139).

Regarding claims 5 and 51, the modified Ammar fails to teach four 1.25 GHz step size.

Slaughter, in the same type of invention, discloses a MMIC transceiver having ranges from 71-76, 81-86, 92-94 GHz (paragraph 56) and receiving over four 1.25 GHz channels (paragraph 54). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have modified Ammar, modified by Slaughter in order to reduce the interference as well to improve the speed of the data transferring.

Allowable Subject Matter

8. Claims 17-41, 43, 44, 46 are allowed.

Regarding claims 17, 26, 35, 43, the prior art of record fails to teach a second MMIC comprising an X2 multiplier coupled to a bandpass filter, the bandpass filter coupled to an amplifier, the amplifier coupled to a X4 multiplier and the X4 multiplier

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coupled to a second bandpass filter and an output of the bandpass filter coupled to an input of a power divider of a first device.

Regarding claims 44 and 46, Ammar discloses the MMIC device comprising: an IF circuit having an IF amplifier, a low pass filter, a mixer, and LO circuit (82, 82a, 83b, 83, respectively).

This reference fails to teach a coupler between a fixed tuned oscillator and a first buffering amplifier.

Regarding claims 18-25, 27-34, 36-41, these claims are allowed as being dependent upon independent claims that have been allowed.

9. Claim 11, 13, 16, 57, 59, 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 11 and 57, the prior art of record fails to teach a multiplier circuit comprising an X2 multiplier coupled to a bandpass filter, the bandpass filter coupled to an amplifier, the amplifier coupled to a X4 multiplier and the X4 multiplier coupled to a second bandpass filter and an output of the bandpass filter coupled to an input of a power divider of a first device.

Regarding claims 13 and 59, the prior art of record fails to teach a coupler between a fixed tuned oscillator and a first buffering amplifier.

Regarding claims 16 and 62, the prior art of record fails to teach the multiplier circuit comprising an amplifier, a X4 multiplier downstream of the amplifier and a filter downstream of the X4 multiplier.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ammar et al. (2005/0124307) discloses a millimeter wave transceiver having three MMIC boards, a transceiver board, a synthesizer board and an IF board (fig.3); Burin (6,573,808) discloses a front-end millimeter wave transceiver (figs. 1, 4), wherein the LO circuit having a divider for dividing a LO reference signal.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Simon Nguyen whose telephone number is (571) 272-7894. The examiner can normally be reached on Monday-Friday from 7:00 AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban, can be reached on (571) 272-7899.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-0377.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

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600 Dulany, Alexandria, VA 22314

Or faxed to:

(571) 273-8300 (for formal communications intended for entry)

Hand-delivered response should be brought to Customer Service Window
located at the Randolph Building, 401 Dulany, Alexandria, VA, 22314.

Simon Nguyen

May 25, 2006

**SIMON NGUYEN
PRIMARY EXAMINER**

Simon Nguyen